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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,166	09/18/2003	Philip C. Zuk	112055-0062U	6348

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EXAMINER	
ALEMU, EPHREM	
ART UNIT	**PAPER NUMBER**
2821	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H-A

Office Action Summary	Application No.	Applicant(s)	
	10/665,166	ZUK ET AL.	
	Examiner	Art Unit	
	Ephrem Alemu	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 6, 7, 9-11, 12-14 and 16-22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimes (US 6,359,444)

Re claims 1, Grimes discloses an RFID tag antenna system (i.e., sensing structure, 60, 70, 80, 90, 100) suitable for receiving an RF signal (Fig. 2), the RFID tag antenna system (i.e., sensing structure, 60, 70, 80, 90, 100) comprising:

a planar two arm spiral structure (i.e., 258, 268 illustrated in Figs. 6C, 6D)) arranged to receive the RF signal ((i.e., antenna 68, 78, 88, 98, 108 illustrated in Figs. 2A-2E), the two arms electrically isolated from each other but arranged defining a gap between the two arms (Figs. 6C, 6D), and

an electronic circuit including means for receiving and sensing the receipt of the RF signal (i.e., resonant circuit 64, 74, 84, 94, 104) electrically connected to the arms straddling the gap and arranged to receive the RF signal from the planar two arm spiral antenna (Figs. 2A-2E, Figs. 6C-6D; Col. 19, lines 25-55; Col. 20, line 56- Col. 21, line 50).

Although, Grimes does not specifically suggest use of the antenna within the narrow frequency range from about 860 MHZ to 920 MHZ, Grimes does disclose the use of antenna

within the operation range from 900 MHZ to 1100 MHZ for the purpose of identifying a frequency value for the sensor (Col. 21, lines 15-43; Col. 19, lines 25-55).

However, a skilled artisan recognizes that all antennas may be frequency-scaled to any operational band as needed in a particular application.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Grimes antenna to operate within narrow frequency range from about 860 MHZ to 920 MHZ for the purpose of operating the antenna within the operating range from about 860 MHZ to 920 MHZ to identify a frequency value for the sensor.

Re claim 2, Grimes further discloses the each arm of the planar two arm spiral structure (258, 268) is identical to the other except one is rotated the plane by 180 degrees from the other (Figs. 6C, 6D).

Re claims 6 and 7, Grimes further discloses the antennae may be of a myriad shapes and sizes (i.e., the lateral dimension of the planar two spiral arm structure being less than about two inches by less than one inches) (Figs. 2A-2E; 6C, 6D; Col. 20, lines 40-67).

Re claims 9-11; Grimes further shows the electronic circuit (i.e., resonant circuit 64) comprises: a network that matches the spiral antenna electrical impedance and that receives the RF signal from the planar two arm spiral antenna and provides an RF output signal; and an input circuit that receives and rectifies the output RF signal forming a DC signal, the input circuit including a capacitor the stores energy from the DC signal (Figs. 2A-2E; Col. 13, line 17-Col. 14, line 48).

3. Claims 3-5 and 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimes (US 6,359,444) in view of an article in Applied Microwave and Wireless by Thaysen et al. submitted by Applicant.

Re claims 4 and 15, eventhough Grimes does not show the inner and outer radial spirals adhere to a logarithmic function, Grimes discloses spiral antenna and equiangular spiral antenna and further teaches in addition other known antenna deigns may be incorporated in the RFID tag antenna system (i.e., sensing structure, 60, 70, 80, 90, 100).

Thaysen discloses one known antenna structure wherein the inner and outer radial spirals adhere to a logarithmic function (i.e., a logarithmic spiral antenna) in Fig. 1, for the purpose of broadband application.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to substitute the equiangular planar spiral antenna of Grimes with a logarithmic spiral antenna as discloses by Thaysen for no other reason than transmitting or receiving RF signals at a desired frequency and further Grimes teaches that other known antennas may be used for the purpose of transmitting or receiving an RF signal.

Re claims 3, 5 and 8, Thaysen further discloses a center being defined at the middle of the gap, and wherein each arm of the planar two spiral structure defines an inner radial spiral and an outer radial spiral (i.e., a logarithmic spiral antenna) arranged so that the width of each arm grows as the arms radiate further from the center (Fig. 1a; wherein at any point equidistant from the center the widths of each arm are equal to each other and equal to the spaces between each arm and wherein each arm of the planar two arm spiral structure comprises a thin conductive layer built onto a substrate (i.e., glass or ceramic)).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to substitute the equiangular planar spiral antenna of Grimes with a logarithmic spiral antenna as discloses by Thaysen for no other reason than transmitting or receiving RF signals at a desired frequency for the purpose of identifying a frequency value for the sensor. Further, Grimes teaches that other known antennas may be used for the purpose of transmitting or receiving an RF signal. Furthermore, Grimes teaches of using broadband antennas, such as spiral antennas, transmitting and receiving antennas (Fig. 4A, 5, 6c, 6d; Col. 6, lines 11-23; Col. 21, lines 15-60).

Re claims 12 – 22, given Grimes's modified by Thaysen's RFID tag antenna system (i.e., sensing structure, 60, 70, 80, 90, 100) suitable for receiving an RF signal, the method for receiving an RF signal from an RF signal generated as part of an RFID tag system as claimed in claims 12-22 is inevitable.

Response to Arguments

4. Applicant's arguments filed on 11-23-04 have been fully considered but they are not persuasive. In response to applicant argument that Grimes (US 6,359,444) patent does not disclose or suggest narrow frequency range from about 860 MHZ to 920 MHZ is respectfully disagreed. Although, Grimes does not specifically suggest use of the antenna within the narrow frequency range from about 860 MHZ to 920 MHZ, Grimes does disclose the use of antenna within the operation range from 900 MHZ to 1100 MHZ for the purpose of identifying a frequency value for the sensor (Col. 21, lines 15-43; Col. 19, lines 25-55). However, a skilled artisan recognizes that all antennas may be frequency-scaled to any operational band as needed in a particular application.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Grimes antenna to operate within narrow frequency range from about 860 MHZ to 920 MHZ for the purpose of operating the antenna within the operating range from about 860 MHZ to 920 MHZ to identify a frequency value for the sensor.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (571) 272-1818. The examiner can normally be reached on M-F Flex hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K. Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WILSON LEE
PRIMARY EXAMINER

EA
2-03-05